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09/857,025	05/31/2001	Kotaro Kawamura	2001-0678A	7698

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EXAMINER

COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3743

1.0

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,025

Applicant(s)

KAWAMURA ET AL.

Examiner

Josiah C. Cocks

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 5/23/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12, 13, 19-22 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 13, 19-22 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 3743

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment is acknowledged. The amendments have been entered. The substitute specification has also been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 19-21 and 27 rejected under 35 U.S.C. 102(e) as being anticipated by *Endoh et al.* (US # 6,234,787) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system and method of operating substantially as described in applicant's claims 4-9 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls. *Endoh et al.* also discloses multiple burning gas inlet parts (2a, 2b, and 2d) which form auxiliary burning gas inlet parts with

Art Unit: 3743

auxiliary burning gas nozzles in burner (21). *Endoh et al.* further discloses purge gas supply means (38), air nozzles (4) (see col. 3, lines 41-61), a chamber (20) containing spray nozzles (19) for liquid coolant, and spray nozzles (5) for removing powders from the inner surface of the wall (12).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* (US # 6,234,787) in view of *Ahmady* (US # 5,165,887) and *Holmer* (US # 4,547,148) (note:

Art Unit: 3743

Endoh et al. is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system substantially as described including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls.

Endoh et al. possibly does not disclose that the combustion chamber is formed from an inner wall made of fiber-reinforced ceramic material comprising ceramic cloth coated with a binder-containing ceramic material.

Ahmady teaches a burner element having a combustion chamber surrounded by porous ceramic walls wherein these walls are specifically made of woven ceramic fiber to create a cloth (see col. 3, line 52 through col. 4, line 8). *Ahmady* further teaches that the ceramic fiber may be "Fiberfrax Woven Textile" brand (see col. 7, lines 1-9).

Holmer is cited to simply show that Fiberfrax™ brand ceramic fibers are understood in the art to include an inorganic refractory binder (see col. 2, lines 28-33). Therefore, it would be inherent that the Fiberfrax™ ceramic fiber of *Ahmady* would include a binder.

Therefore, in regard to claims 1-3, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the porous combustion chamber walls of *Endoh et al.* to include the ceramic fiber material taught by *Ahmady* as this material desirably has a pore size that helps prevent clogging of the burner element when compared with prior porous wall structures (see col. 4, lines 35-42) and is desirable more flexible than prior

Art Unit: 3743

porous wall structures which allows the structure to maintain its shape if knocked against a hard object (see col. 4, lines 46-55).

7. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* (US # 6,234,787) in view of *Lipp* (US # 4,857,075) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system and method of operating substantially as described in applicant's claims 4-9 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls. *Endoh et al.* also discloses multiple burning gas inlet parts (2a, 2b, and 2d) which form auxiliary burning gas inlet parts with auxiliary burning gas nozzles in burner (21). *Endoh et al.* further discloses purge gas supply means (38), air nozzles (4) (see col. 3, lines 41-61), a chamber (20) containing spray nozzles (19) for liquid coolant, and spray nozzles (5) for removing powders from the inner surface of the wall (12).

Endoh et al. possibly does not disclose a cooling means for the auxiliary burning gas inlet parts wherein the cooling means includes a cooling jacket.

Lipp teaches a burner having burning gas inlet part wherein this part is cooled by means of a cooling jacket (32) that receives cooling water (see Fig. 1).

Therefore, in regard to claims 4-9, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the waste gas treatment system and

Art Unit: 3743

method of *Endoh et al.* to incorporate the cooling jacket of *Lipp* for the desirable purpose of maintaining the burner parts at a constant temperature (see *Lipp*, col. 10, lines 33-43).

8. Claims 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* in view of *Pritchard et al.* (US # 5,462,429) (cited by applicant) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system substantially as described in applicant's claims 10, 12, and 13 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls.

Endoh et al. possibly does not disclose a dust scraping plate secured to a distal end of a vertically moving shaft.

Pritchard et al. teaches a mechanical wiper for a waste gas incinerator including a wiper rod (40) that may be configured to move vertically (see col. 6, lines 55-68) and wiper segment/plate (49).

Therefore, in regard to claims 10, 12, and 13, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the waste gas treatment system of *Endoh et al.* to incorporate the mechanical wiper of *Pritchard et al.* for the desirable purpose of aiding in the removal of combustion products buildup from the inner wall of the combustion chamber (see *Pritchard et al.*, col. 2, lines 56-64).

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* in view of *Pillard* (US # 3,885,919) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system and method of operating substantially as described in applicant's claim 22 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls. *Endoh et al.* also discloses multiple burning gas inlet parts (2a, 2b, and 2d) which form auxiliary burning gas inlet parts with auxiliary burning gas nozzles in burner (21). *Endoh et al.* further discloses purge gas supply means (38), air nozzles (4) in the sidewall (see col. 3, lines 41-61 and Fig. 1), a chamber (20) containing spray nozzles (19) for liquid coolant, and spray nozzles (5) for removing powders from the inner surface of the wall (12).

Endoh et al. does not disclose that the internal diameter of the waste gas inlet and/or the cylindrical member gradually increases toward the combustion chamber.

Pillard teaches a waste gas treatment system wherein the waste gas is fed into chambers with sections (8a, 8b...8g, Fig. 2) or (12a, 12b, ...12f, Fig. 3) that gradually increase (see Figs. 1-3).

Therefore, in regard to claim 22, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of *Endoh et al.* to incorporate

Art Unit: 3743

the gradually increasing chambers of *Pillard* as the arrangement of the chambers desirably attains a good quality of combustion of the gaseous effluents (see *Pillard*, col. 2, lines 10-21).

Response to Arguments

10. Applicant's arguments with respect to claims 1-10, 12, 13, 19-22, and 27 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues on pages 12 and 13 of the response that a person of ordinary skill in the art would not be motivated to combine *Endoh et al.* with *Pritchard* as the combustion chamber of *Endoh et al.* does not experience dust build-up that would need to be removed by a mechanical wiper. This argument is not found persuasive. As applicant acknowledges *Endoh et al.* does experience powder collection on the inside of tube (12) and uses pressurized gas in an attempt to control the deposition of powders. *Pritchard* discloses that a mechanism for aiding in the removal of dust/powder from a combustion chamber is through the use of a mechanical assembly. A person of ordinary skill in the art would reasonably modify the system of *Endoh et al.* to include the mechanical wiper of *Pritchard* to aid in the control of dust/powder build up.

Applicant also argues that *Pillard* does not disclose that at least one of an inner diameter of a waste gas inlet and an inner diameter of a cylindrical member gradually increase toward the combustion chamber. The examiner regards sections 8a, 8b...8g (Fig. 2) or 12a, 12b...12f (Fig. 3) of *Pillard*, as constituting cylindrical sections with increasing inner diameters.

Art Unit: 3743

Conclusion

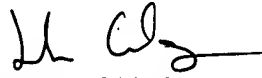
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Garbo* is included to further show the state of the art concerning ceramic fiber walls of a combustion chamber.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett, can be reached at (703) 308-0101. The fax phone numbers for this Group are (703) 308-7764 for regular communications and (703) 305-3463 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
August 21, 2003


JOSIAH COCKS
PATENT EXAMINER
ART UNIT 3743